SESSION 6: BRIDGING THE CAPACITY GAP

Training workshop on the identification and development of climate change no-regret actions in the water sector, 3-5 October 2012, Amman

Presented by: Stéphane SIMONET, Water and Climate Change Expert

Objectives of Session 6

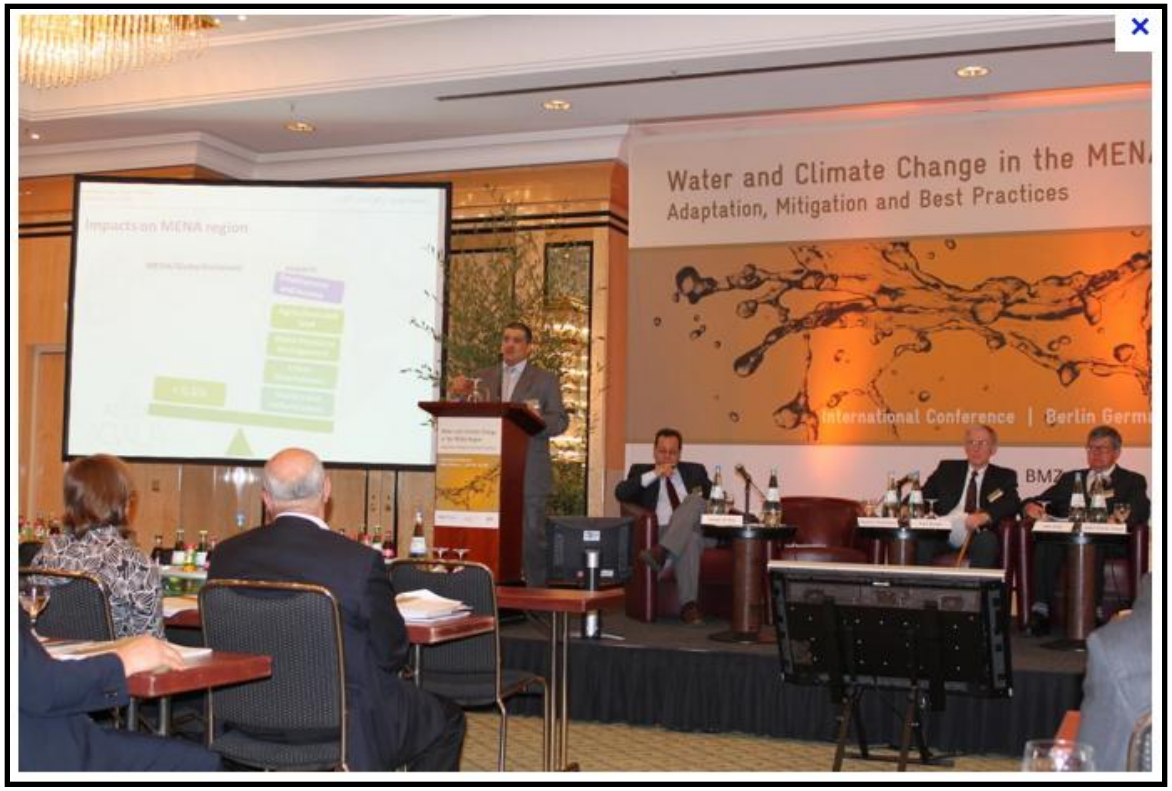
- **Goal**: Enable managers and practitioners to understand, assess and address management adaptive capacity as a key part of successful no-regrets climate change adaptation strategies

- **Learning Objectives:**
  - Thinking strategically about capacity in adaptation strategies
  - Having a solid understanding of the capacities and skills needed for the development and implementation of no-regret measures
  - Being able to assess and address adaptive capacity gaps
  - Knowing major sources of references and guidances

I: Rationale for Capacity Development

The World Bank, 2011

Risks are now **broadly identified** and a growing number of **adaptation recommendations and good practices exist**



•For **MENA**, as seen earlier: no-regret actions + climate resilience practices in water management + economic instruments + adaptation infrastructure planning

Complementing asset-based with **skill-based adaptation**

- Recognition that **"hard" asset-based adaptation must also be balanced with "soft" institutional measures and capacity building**

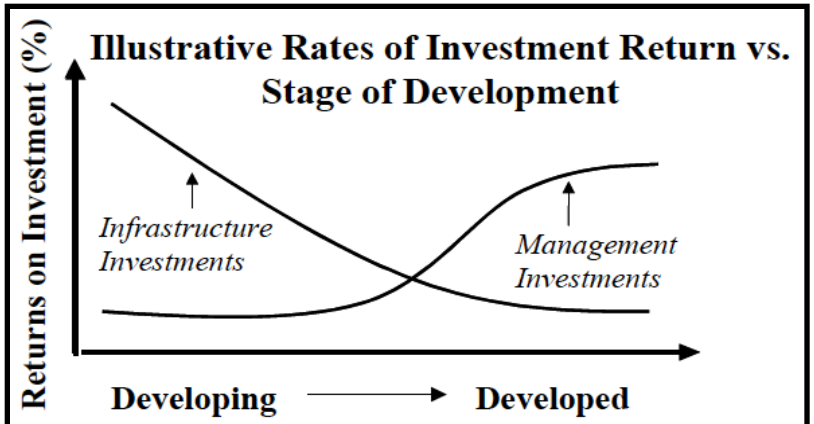


Figure 1: Water infrastructure and management. Source: World Bank (2002)

IUCN/IWA, 2009

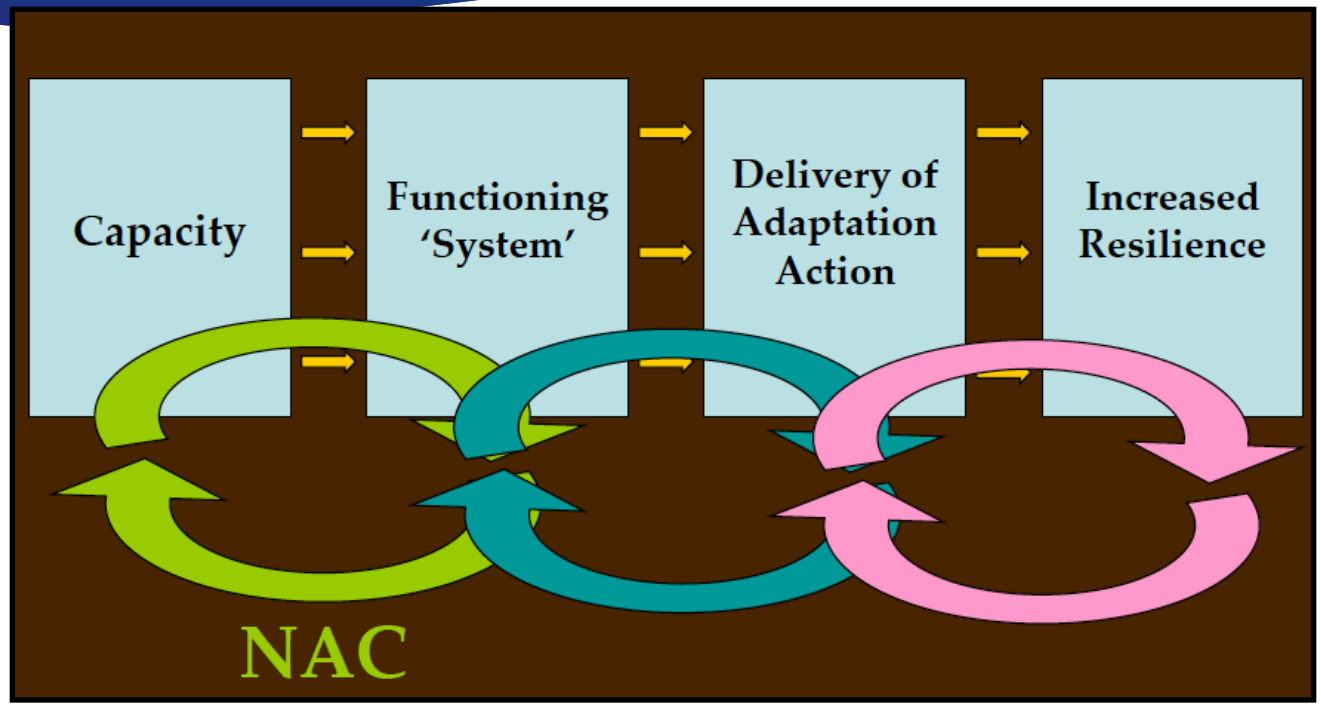
- **Adaptive capacity** is the **ability to identify and respond to climate change impacts and uncertainty by:**
  - **predicting, planning and coping through** effective adaptation strategies on the ground
  - **adjusting strategically and effectively** to changing circumstances

Implementing and **Adjusting**: coping with change **on the ground**

- **Effective institutions and professionals** are now required at the national and local levels to **design** and **implement appropriate adaptation measures based on no/low regrets options, including robust and adaptive management**
- **Need to empower people** and **organizations** with **appropriate tools, skills and sustainable resources** enabling them **to solve their problems and to adapt to changing situations**
- Climate change and its impacts are **dynamic phenomena**: stakeholders will have **to be flexible and to know how to keep updated in order to cope** with **climate variability** and **hydrological uncertainties**

→ **YOU** are part of the **solution** for **successful** climate change **adaptation**

From Capacity to Outcomes



WRI, 2009

- **Capacity building** is a **supportive process** in favour of **effective management** and **increased resilience**
- **Enhanced capacities** lead to a **better grasp of the natural and institutional climate change systems** & to improved **delivery of appropriate adaptation measures**

A National Adaptation System

- **System elements** include **government, businesses, academia, communities and other institutions**

- Ultimately, the **most important adaptations** are at the **household and community levels. BUT policies and institutions at the national level** are **very powerful at enabling** or hindering **community-level adaptation.**

- What **functions** will this system need to perform**?** What **capacities** must be built to perform these functions**?**

- There is **no one « right » way to adapt,** each adaptation strategy must **start from the strengths and weaknesses of the system** in which it is born

Climate change adaptation and capacity building frameworks

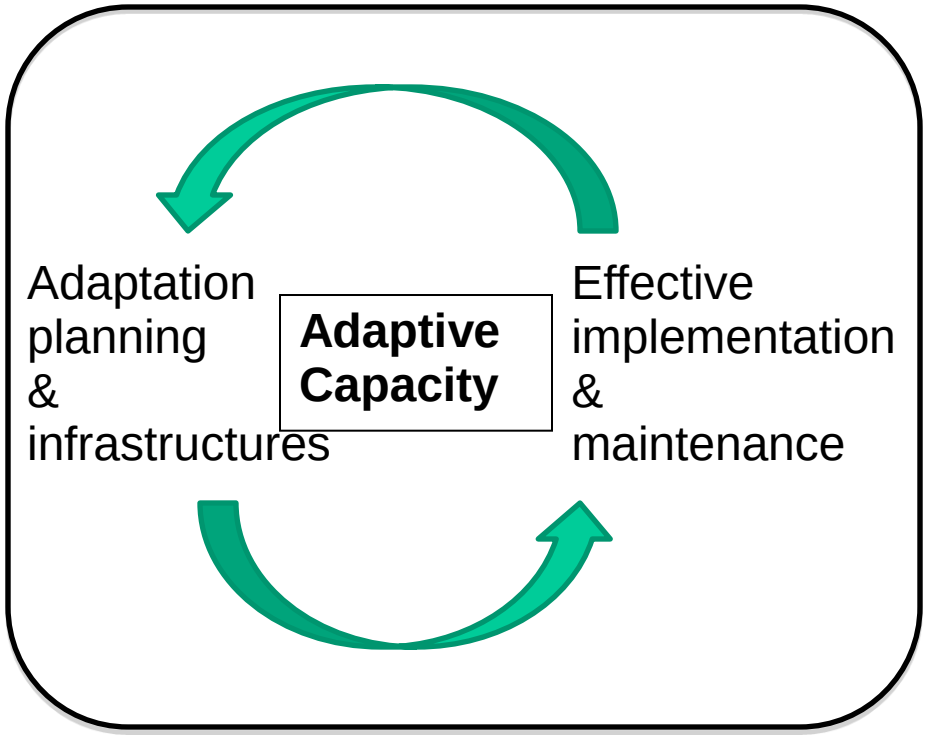
•The international community and numerous organisations have developed a range of **conceptual and methodological frameworks and tool**s to **assess and improve adaptive capacities worldwide**

•Amongst those tools, **the NAC Framework** has shown high **relevance** for the **water sector.** It has been **piloted in Ireland, Bolivia and Nepal,** and has since been **adopted by several cooperation agencies and donors.**

II: Key Adaptive Functions and related capacity development categories

WRI, 2012

The National Adaptive Capacity (NAC) Framework



- Identify **5 key adaptive functions** within three broad categories of *Planning*, *Alignment* and *Risk Management*
- Identify opportunities and priorities for building adaptive capacity and implementing key activities
- Flexible to be tailored to country contexts

The NAC's **5 main adaptive functions**

Planning

Risk
Management

Alignment

→ The NAC treats **performance** of these 5 functions as an indicator of a country's **overall adaptive capacity**

1. Assessment

- Capacity to **gather and examine available information** to **guide decision-making**

- **Iterative process** as climate conditions evolve over time

- Should **focus** on: CC impacts, vulnerability, adaptation practices

Vulnerability and impact assessment

•**Vulnerability and impact assessments** use a series of approaches, models and tools depending on requirements

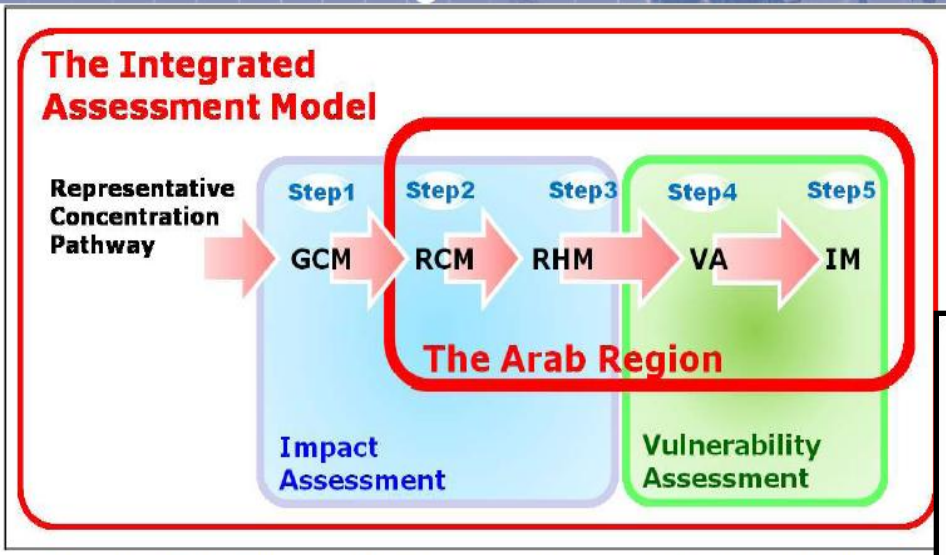
•Measures may be **quantitative, qualitative or indicator-based** but all are based on a **range of evidence**, including **quantitative data**

•**Improving collection and access** to such data is vital for **both technical staff and researcher**, especially in Africa

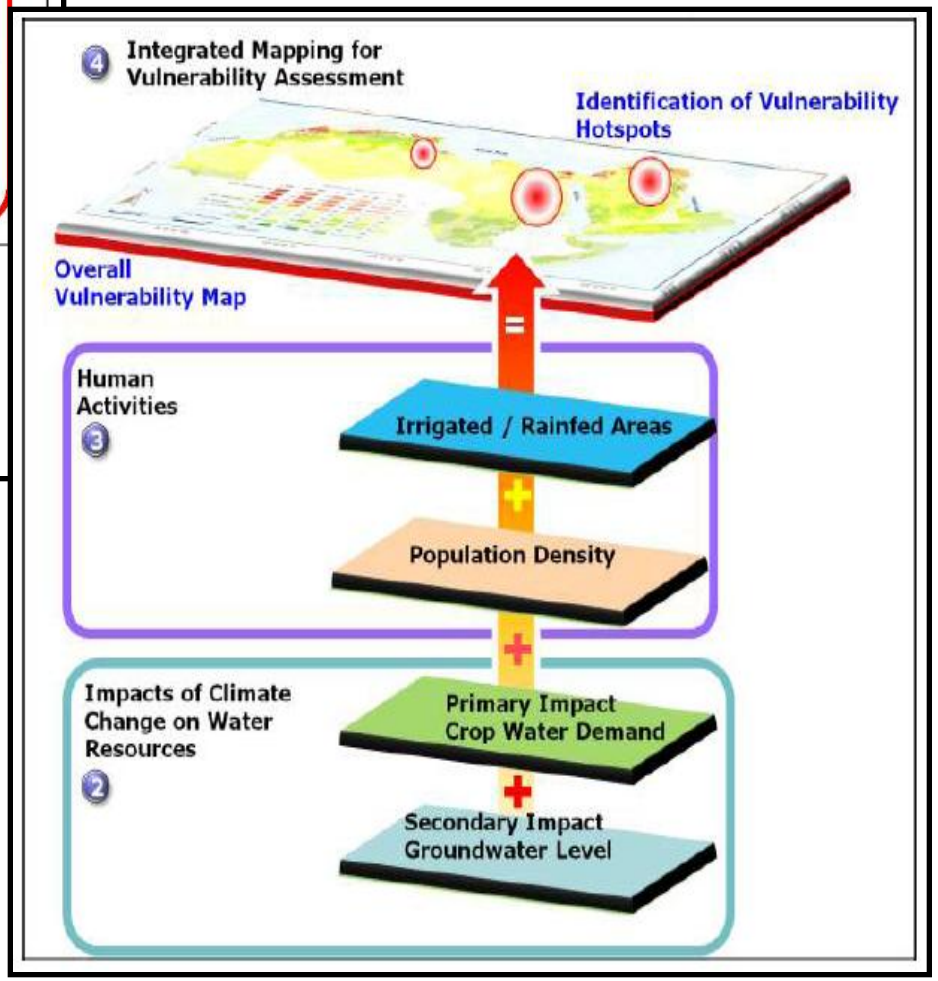
•Potential purposes for vulnerability and impact assessment include:

- National or basin-wide assessments of climate risks
- Sector specific impacts of climate risks
- Vulnerability and impact mapping
- Community and livelihood vulnerability assessments

Climate Change Integrated Assessment Methodological Framework



Step 1: Global Climate Modeling using General Circulation Model
Step 2: Regional Climate Modeling
Step 3: Regional Hydrological Modeling
Step 4: Vulnerability Assessment
Step 5: Integrated Mapping



UN-ESCWA, 2011

1. Assessment - Capacity development categories

Analytical skills

- Research, Inventory & Review
- Analysis
- Synthesis

Methodological skills

- Methods & indicators
- Models & scenarios
- Options appraisal (SWAT, CBA, etc)

No-regret: Skill set contributing to Environmental Impact Assessment (EIA) or Strategic Environmental Assessment (SEA) missions!

1. Assessment – Regional capacity challenges

- Resources and budget available to conduct iterative risk mapping
- Institutional arrangements and mandates (need for institutionalization)
- Partnerships b/w government agencies and research institutions (international vs. national expertise)
- Harmonization/standardization of V&A standards and methodologies
- Stock-taking and dissemination of relevant information on CC hydrological impacts and adaptation efforts
- Capacities to access hydro-climatic data and quality/quantity of available data (climate database and services, regional networks
- Application of state-of-the-art climate and hydrological modelling technologies (GCM/RCM, GIS, RST, SID, model coupling, …)
- Capacities to properly assess, communicate and deal with uncertainties throughout the assessment chain

1. Assessment – Building Capacities

- **UN-ESCWA**'s Regional initiative to assess the impact of climate change on water resources and socio economic vulnerability in the Arab region: **capacity building** & **integrated assessment methodology** *(www.escwa.un.org)*

- **SEI's WEAP Water and CC scenario planning tool for the Jordan river basin**

ESCWA UNEP ACSAD LAS

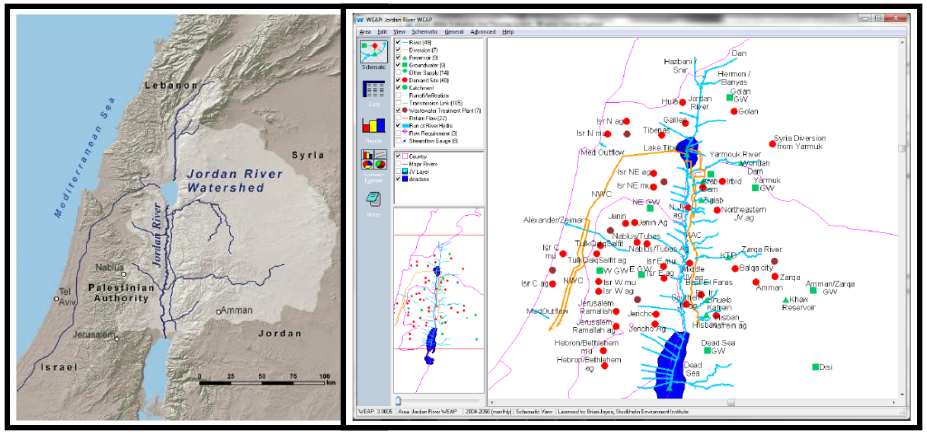
National Research Institutes *(under formalization)*

Environmental and Climate Research Institute (ECRI)
Ministry of Water Resources and Irrigation (Egypt)

Center of Excellence for Climate Change Research
PME - King Abdulaziz University (KSA)

SMHI

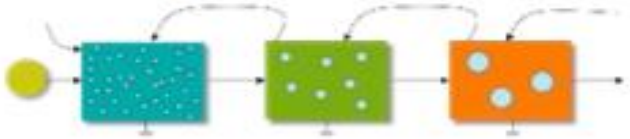
World Meteorological Organization
Working together in weather, climate and water



2. Prioritization

- Capacity to **arbitrate** between different adaptation options, areas, sectors or populations. E.g.:
  - Should the onus be on increasing water supply or managing demand?
  - Should priority be given to water scarce areas or high-value irrigated land?
- Should consider what/where climate change impacts will be the **most severe** and who will be **most vulnerable and affected**
- **Inclusive, transparent and flexible process** as much as possible within values, concerns and power constraints

« Stratégie nationale d'adaptation de l'agriculture tunisienne et des écosystèmes aux changements climatiques »



- The Strategy and its Action Plan establish a series of priorities as well as related activities, leads and schedules. The two water priorities are:

- Implementing and strengthening the law:
  - Implement the Water Code strictly
  - Strengthen the law on reducing water consumption and vulnerable areas
  - Rationalise institutional arrangements and update the agricultural policy's water programme

- Managing water through economic instruments:
  - Managing water on an ecosystem-basis and use models to understand hydrological processes
  - Introduce climatic variations and property rights in water tarification

2. Prioritization - Capacity development categories

Political skills

- Legitimacy/mandate
- Vision & Strategy
- Power arrangements & options weighting

Negotiation skills

- Listening to stakeholders
- Influencing & convincing
- Partnership working & deal brokerage

No-regret: Skill set contributing to programme management with strategic themes, budget, high profile projects and annual activities!

2. Prioritization – Regional capacity challenges

• Centralized, top down vs. bottom-up and stakeholder-driven prioritization process (e.g. territorial and community-based approach)

• Need for transparent and well informed prioritization process and criteria

• Alignment with wider country development objectives

• Use of advanced adaptation planning and decision support methods and tools (e.g integrated models, scenario building, foresight methods, Robust decision making, etc)

• Greater application of economic and financial appraisal tools (e.g. CBA, MCA, etc.)

• Making use of innovative, flexible, soft and ‘’natural’’ solutions in prioritization and planning processes

2. Prioritization – Building capacities

- **Morocco's «Towards resilient oasis»**, a territorial approach to adaptation planning in the water sector based on **stakeholder-led prioritization processes** (Local adaptive water management Plans)

ROYAUME DU MAROC
Ministère de l'Energie,des Mines,de l'Eau et de l'Environnement
Département de l'Environnement

Oasis Résilientes
L'ADAPTATION AU CHANGEMENT CLIMATIQUE
CONVERGENCE ET CAP SUR LA RÉSILIENCE

- **Jordan's MDG analysis of climate change risks on water** availability and quality **and upgrading of local and national capacities for development and prioritization** of adaptation measures for the Zarka River Basin

MDG:F
MDG ACHIEVEMENT FUND

Adaptation to climate change to sustain Jordan's MDG Achievements (MDGF-1646-)

3. Coordination

- Capacity to **coordinate the activities of disparate water actors** (drinking, sanitation, agriculture, energy…) at **multiple levels** (national, basin, local…)
- Avoids duplication or omission and can create **economies of scale**
- Should be done h**orizontally, vertically and across sectors** to include all key water stakeholders beyond the water and climate change communities
- The **cross-cutting and dynamic** nature of climate change makes coordination all the more important

Water and Climate Change intersectoral coordination in Morocco

- The **High Council on Water and Climate (CSEC)** was created in 1981 to improve coordination between water administrations and stakeholders in Morocco (prime minister, ONEP, ONE, basin agencies, ORMVAs, users, research institutes, elected representatives, etc) and to make recommendations on national water and climate strategies
- The **Interministerial Water Commission (CIE)** brings together ministries interested in the water sector and helps implement the CSEC recommendations
- The **County and Local Water Commissions (CPPE)** were created in 1995 and help implement local actions in partnership with elected representatives and users

However many challenges subsist that prevent these bodies from performing effectively

3. Coordination - Capacity development categories

Institutional cooperation skills

- Inclusiveness
- Coordination responsibilities & mechanisms
- Conflict resolution

Result-based management skills

Time & schedule

Quality focus

Budget keeping

Outcome-driven

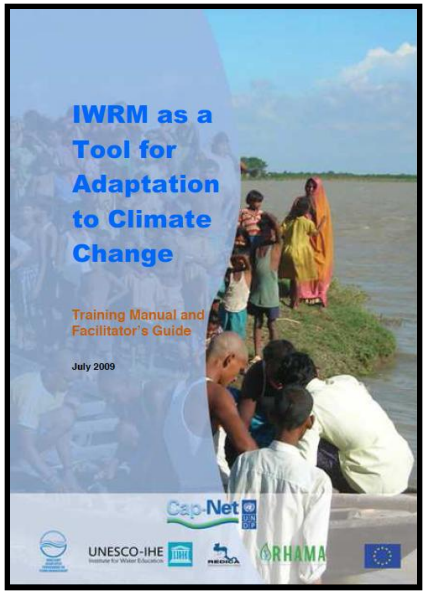
No-regret: Skill set contributing to standard Integrated Water Resource Management (IWRM) and multi-stakeholder development projects!

3. Coordination – Regional capacity challenges

- Coordination challenges in water area are numerous & not specific to CCA
- However, CCA renders coordination even more important as successful adaptation is about effective *mainstreaming of no regret measures within and beyond the water sector*
- Need for functional institutional arrangements to steer and coordinate water-related adaptation decisions in multiple sectors in full alignment with development priorities of the country (High Office, National Committee, Commission, etc.)
- Improvement of inter-ministerial dialogue, clear institutional mandates and decision-making bodies
- Negotiation, cooperation and conflict resolution capacities of government agencies and decision-makers
- Empowerment and participation of non-state actors (CSOs, private sector, etc.) and vulnerable groups

3. Coordination – Building capacities

- **Cap-Net's training manual and facilitator's guide « IWRM as a tool for adaptation to Climate change »** (July 2009)

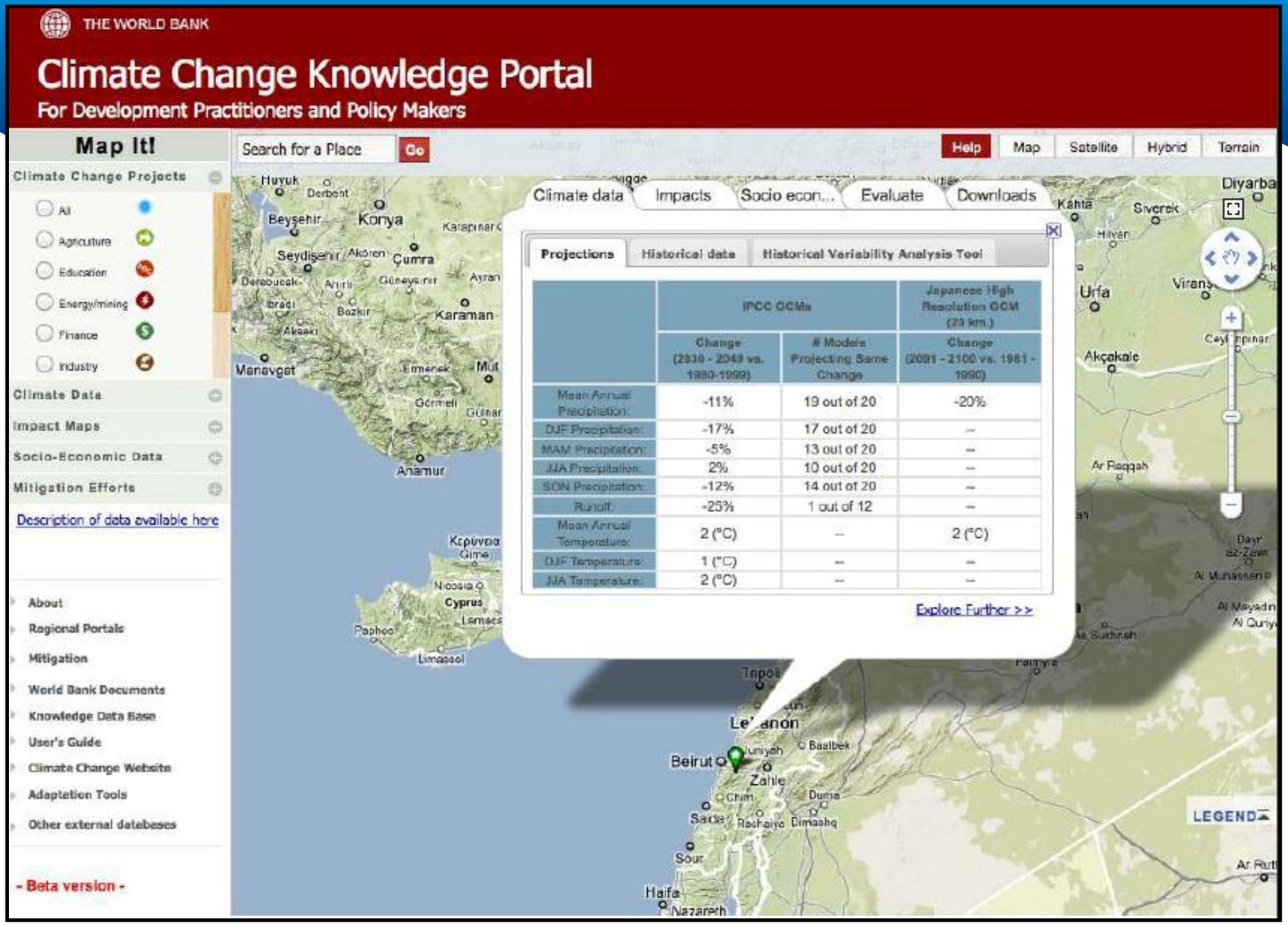


- **ACRI's** support to formulate **integrated, cross-sectoral and regional responses** to the challenges of climate change and to facilitate **practical and cooperative adaptation. 3 consultations (Egypt, Syria, Bahrain) and one Forum (Morocco) to date.**

UNDP Regional Bureau for Arab States (UNDP-RBAS)
Arab Climate Resilience Initiative

4. Information and Knowledge Management

- Capacity to **collect**, **interpret** and **disseminate** water and climate information and good practices in support of water-based adaptation
- Ensure that information is **useful and accessible** to stakeholders, through both ICTs and traditional media
- Should cover at least climate and hydrological variables, the status of water systems and existing coping strategies
- **Sharing experience and good-practice** is also an important element of knowledge management


THE WORLD BANK
Climate Change Knowledge Portal
For Development Practitioners and Policy Makers
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Search for a Place
Go
Help
Map
Satellite
Hybrid
Terrain
Climate Change Projects
All
Agriculture
Education
Energy/mining
Finance
Industry
Climate Data
Impact Maps
Socio-Economic Data
Mitigation Efforts
Description of data available here
About
Regional Portals
Mitigation
World Bank Documents
Knowledge Data Base
User's Guide
Climate Change Website
Adaptation Tools
Other external databases
- Beta version -
Climate data
Impacts
Socio econ...
Evaluate
Downloads
Projections
Historical data
Historical Variability Analysis Tool
IPCC GCMs
Japanese High Resolution GCM (20 km)
Change (2030 - 2049 vs. 1980-1999)
Models Projecting Same Change
Change (2081 - 2100 vs. 1961 - 1990)
Mean Annual Precipitation:
-11%
19 out of 20
-20%
DJF Precipitation:
-17%
17 out of 20
--
MAM Precipitation:
-5%
13 out of 20
--
JJA Precipitation:
2%
10 out of 20
--
SON Precipitation:
-12%
14 out of 20
--
Runoff:
-25%
1 out of 12
--
Mean Annual Temperature:
2 (°C)
--
2 (°C)
DJF Temperature:
1 (°C)
--
--
JJA Temperature:
2 (°C)
--
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Explore Further >>
Konya
Beyşehir
Seydişehir
Çumra
Karaman
Manavgat
Anamur
Mut
Ermenek
Görmeli
Cyprus
Nicosia
Paphos
Limassol
Larnaca
Beirut
Zahle
Baalbek
Sour
Haifa
Nazareth
Tripoli
Urfa
Akçakale
Viranşehir
Siverek
Diyarbakır
Kahta
Hilvan
Ar Raqqah
LEGEND

4. Information and Knowledge Mgt - Capacity development categories

Knowledge management skills

- Hydro-climatic data monitoring & collection
- Observing and modelling capacities
- Information processing and analysis
- Practice learning and exchange

Outreach & advisory skills

- Policy and technical advice
- Cooperation & sharing
- Communication and awareness raising

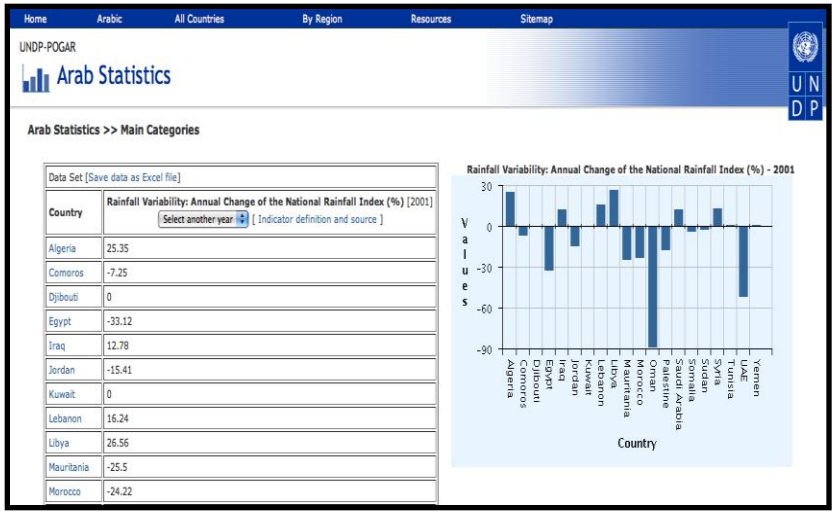
➡ ***No-regret****:* Skill set contributing to main environmental information and communication systems!

4. Information and Knowledge Mgt – Regional capacity challenges

- Strengthen climate & hydrological forecasting & monitoring capacities
- Upgrading of existing networks and equipments, standardization and integration of monitoring, collection and treatment methodologies and creation of institutional incentives for data and information sharing
- Access to the climate data (in some countries, this is a paid service)
- Importance of improving the link between information producers and end-users
- Capacities to develop and use relevant climate services and products that are tailored to the needs of decision makers and managers and that allow for adequate warning and responses (e.g Early warning systems)
- Capacities of water managers and users to analyze, interpret and use climate science and information
- Evidence of ‘good adaptation practices’ insufficiently recorded, catalogued and promoted
- Ability and resources to develop & operate national information systems on CC and adaptation

4. Information Mgt – Building capacities

- Part of UNDP's Arabstats.org initiative, the **Climate Change Data Center** is a **searchable database of up-to-date climate change and environment data on the twenty Arab countries** covered by UNDP's Regional Bureau for Arab States.
- To enhance **Turkey's capacity to adapt**, **Istanbul Technical University** has opened a **climate change information portal** agora.itu.edu.tr



5. Climate Risks Management

- Capacity to **identify specific risks** to a given priority, to evaluate a range of options to address it, and to select and implement risk reduction measures (see Sections 4 & 5)
- **Tailor** climate risks management solutions to the challenges faced by **water- related sectors** (drinking water, sanitation, agriculture, energy,…)
- For water in the **SWIM region**, should particularly consider sea level rise, climate variability and extreme weather events (droughts and floods), water scarcity and food security

Adaptation chain

CAP-Net, 2011

5. Climate Risks Management - Capacity development categories

Risks reduction skills

- Identification & prevention
- Resilience planning
- Early warning systems

Disaster response skills

- Emergency planning
- Safety response
- Recovery

No-regret: Skill set contributing to mainstream disaster management skills and strategies!

5. Climate Risks Management – Regional capacity challenges

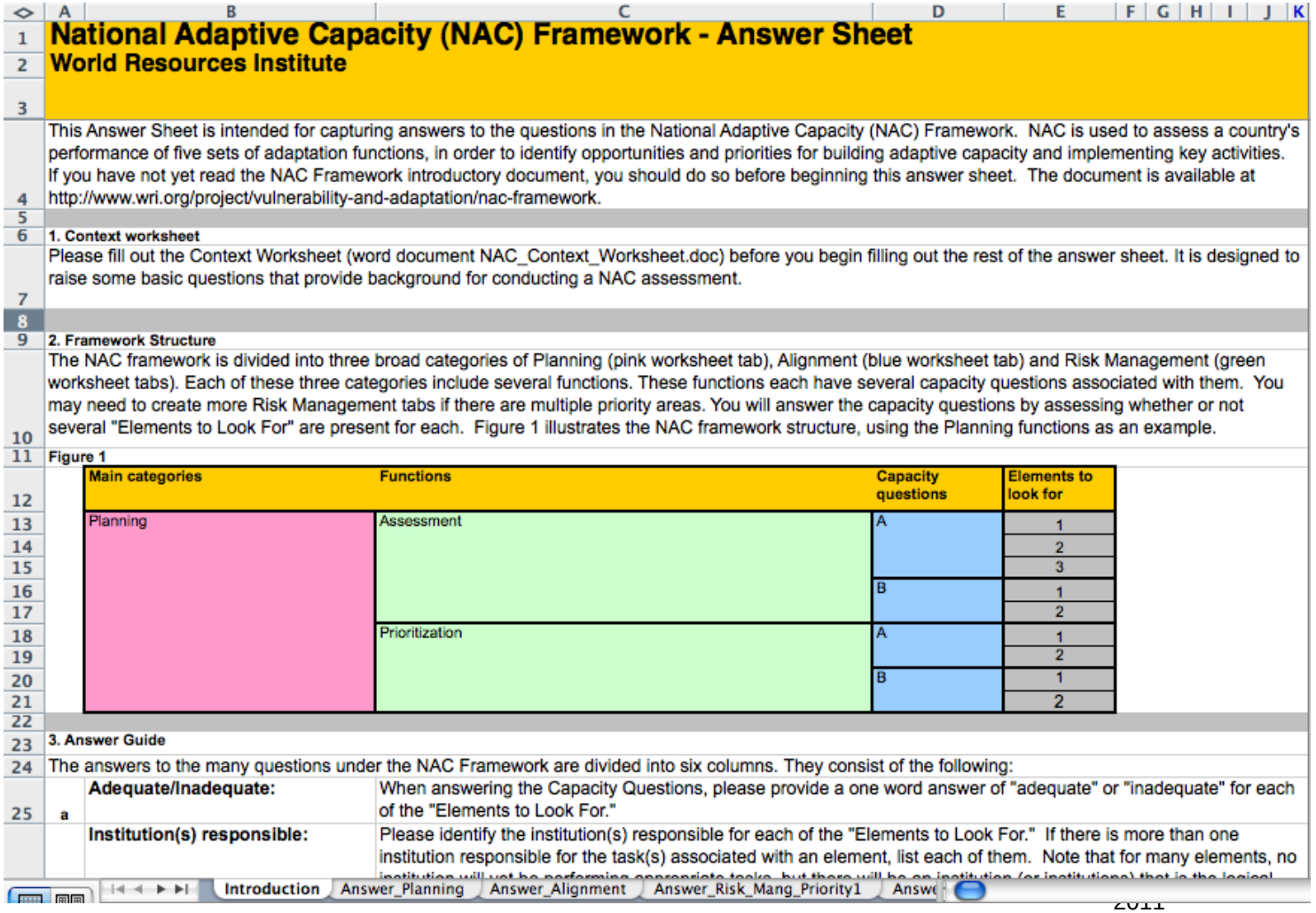
- Soft, small and local vs hard, engineering and large solutions
- Supply-based vs. demand management options
- Enhancing the role of natural infrastructures, ecosystem services, social protection and policy tools (e.g., zoning regulations, permitting rules, taxes, etc.) in no-regret CRM investment portfolio
- Mobilization of indigenous knowledge and community expertise
- Incorporation of uncertainties into actions : reversibility, resilience and robustness of water management measures
- Regular M&E, performance review and adaptive management of adaptation actions

5. Climate Risks Mgt – Building capacities

- **Egypt's Climate Change Risk Management Programme (CCRMP)** is a national cross-cutting programme implemented across multiple ministries and sectors, targeting both **mitigation and adaptation** through 4 components, including **water management**

- **UNDP's El Mouddaa Community-Based Adaptation initiative** in Morocco for **climate risk management** in face of increasingly erratic and violent **rainstorms** and **droughts**

III: The NAC Assessment Tool



National Adaptive Capacity (NAC) Framework - Answer Sheet

World Resources Institute

This Answer Sheet is intended for capturing answers to the questions in the National Adaptive Capacity (NAC) Framework. NAC is used to assess a country's performance of five sets of adaptation functions, in order to identify opportunities and priorities for building adaptive capacity and implementing key activities. If you have not yet read the NAC Framework introductory document, you should do so before beginning this answer sheet. The document is available at http://www.wri.org/project/vulnerability-and-adaptation/nac-framework.

1. Context worksheet

Please fill out the Context Worksheet (word document NAC_Context_Worksheet.doc) before you begin filling out the rest of the answer sheet. It is designed to raise some basic questions that provide background for conducting a NAC assessment.

2. Framework Structure

The NAC framework is divided into three broad categories of Planning (pink worksheet tab), Alignment (blue worksheet tab) and Risk Management (green worksheet tabs). Each of these three categories include several functions. These functions each have several capacity questions associated with them. You may need to create more Risk Management tabs if there are multiple priority areas. You will answer the capacity questions by assessing whether or not several "Elements to Look For" are present for each. Figure 1 illustrates the NAC framework structure, using the Planning functions as an example.

Figure 1

Main categories	Functions	Capacity questions	Elements to look for
Planning	Assessment	A	1
			2
			3
		B	1
			2
	Prioritization	A	1
			2
		B	1
			2

3. Answer Guide

The answers to the many questions under the NAC Framework are divided into six columns. They consist of the following:

a	**Adequate/Inadequate:**	When answering the Capacity Questions, please provide a one word answer of "adequate" or "inadequate" for each of the "Elements to Look For."
	Institution(s) responsible:	Please identify the institution(s) responsible for each of the "Elements to Look For." If there is more than one institution responsible for the task(s) associated with an element, list each of them. Note that for many elements, no

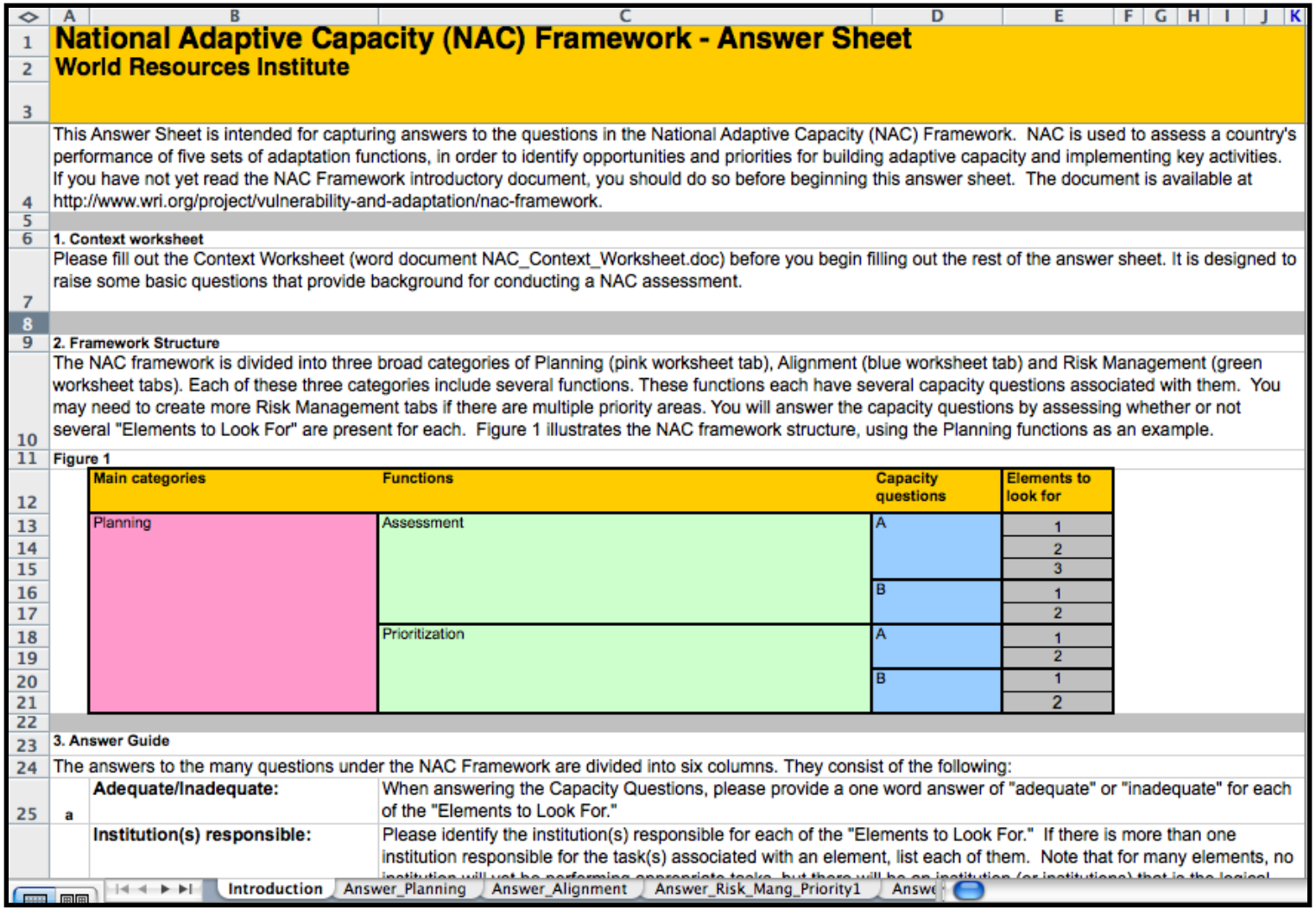
Introduction | Answer_Planning | Answer_Alignment | Answer_Risk_Mang_Priority1 | Answ

The NAC Assessment Tool

- To **assess and address capacity development needs** within each country/organisation
- Based on:
  - A series of questions related to the **5 key adaptive capacities**
  - **Colour coded/traffic lights rating** of perceived performance
- **Context** worksheet and **Answer** worksheet

→ The NAC tool is **one amongst many assessment frameworks** to analyse and tackle adaptive capacity gaps

The NAC Assessment Tool



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Introduction | Answer_Planning | Answer_Alignment | Answer_Risk_Mang_Priority1 | Answe

Key Messages : YOU are part of successful CC adaptation

- **Adaptative capacities are as crucial as adaptation planning and infrastructures** to cope with climate change's impacts on water and its uncertainties on the ground
- The 5 key adaptive functions are: **assessment, prioritization, coordination, information management and climate risks management**
- Developing these adaptive capacities is a **no-regret action** as they overlap significantly with major sustainable development skills and can help avoid maladaptation
- Each water sector organisation can use tools such as the NAC Framework to **assess its adaptive capacities and take action to tackle the gaps identified**


شكرا لانتباهكم
Thank you for your attention

Q&A, Discussion

- Any needs for clarification?
- Are soft (institutional and capacity) responses really as important as hard (infrastructure) ones in the SWIM region?
- How would you describe the SWIM region's level of adaptative knowledge and skill at the moment?
- At which level should these adaptive capacities be developed in priority (national, regional, local, community, etc)?
- Which key players could help bridge the capacity gaps?